

DART
AEROSPACE
S014595

Dart Aerospace Ltd.

1270 Aberdeen Street
Hawkesbury, ON K64 1K7
CANADA

TEL.: 1 613 632-5200

Email: sales@dartaero.com

www.dartaerospace.com



Spacer

PART NO: D4720-1

Revision:

Operation: Outsource

Change No:

Mfg Date: 11/28/17

Job No: 167840



Dart Hawkesbury
1270 Aberdeen St
Hawkesbury, ON
K6A 1K7
Canada

Tel (613) 632-5200

D4720-1
Job Sheet 167840



Part No: D4720-1

Job Qty: 300 ea

Part Name: Spacer



Part Weight: 0 lbs

Status: Scheduled

Priority: High

Job Created: 11/7/17

Job Tracking No:

Due Date: 11/17/17

Created By: Mario Poulin

Type: SOLD

Description:

Ship Via:

Bill of Materials

Job Routing

Op No	Operation	Qty	Start Date	Due Date	Standard		Workcenter/Supplier		Sign-off
					Setup hrs	Run Hrs	Workcenter / Supplier	Lead Time	
90	Start up Operation	300 Ea	11/16/17	11/16/17	0.00	0.00	Start Up Machining		
100	Hardinge	300 pcs	11/16/17	11/16/17	0.00	5.40	Hardinge		
120	QC	300 pcs	11/16/17	11/16/17	0.00	0.00	QC8		
130	Outsource	300 pcs	11/16/17	11/16/17	0.00	0.00	Outsource1		
140	Packaging	300 pcs	11/16/17	11/16/17	0.00	0.00	Packaging2		
150	QC	300 pcs	11/16/17	11/16/17	0.00	0.00	QC6		
160	HandFinish	300 pcs	11/17/17	11/17/17	0.00	0.97	HandFinish4		
190	Packaging	300 pcs	11/17/17	11/17/17	0.00	0.00	Packaging3		
200	QC21-SA	300 Ea	11/17/17	11/17/17	0.00	0.00	QC21		

Part Op 100 - 1- Machine as per Folio FB0 ***PART-OFF AT MAX TOL at 2.2100" *****
Descriptions: 130 - ***HEAT TREAT AS PER DWG D4720***
190 - ***STOCK IN SKIDTUBE CELL**

PO 038307

NOV 09 2017

Job Allocations

Operation	Component Part	Required	Inventory	Allocated	Std Qty
90-Start up Operation	M6061T6T0.375W.058	80	150	0	0

Part Specifications

Spec No	Description	Target/Tolerance	Limits	Type	Special Comments
1	Spacer	0.375inches	+ 0.006 - 0.001	0.381 0.374	
2	Spacer	0.259inches	+ 0.006 - 0.001	0.265 0.258	
3	Spacer	0.058inches	± 0.010	0.068 0.048	
4	Spacer	3.180inches	+ 0.030 - 0.010	3.210 3.170	

12x9x7 9 lbs
x 306 parts

↳ Drawing says 3.250 (rev.B)

Plex 11/7/17 11:05 AM dart.poulin.mario

DART
AEROSPACE
S007839



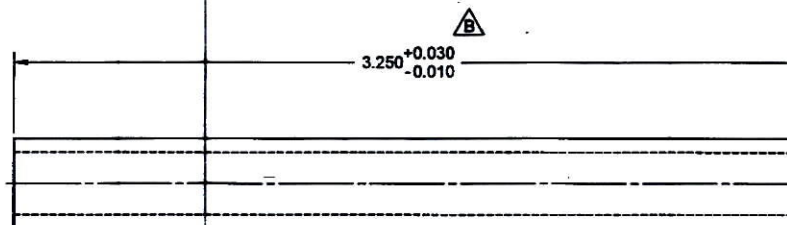
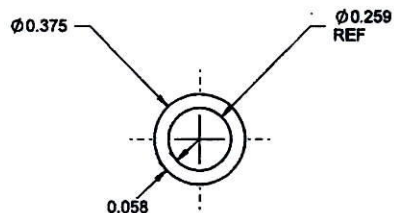
Spacer

PART NO: D4720-1
Revision:
Operation: Start up Operation
Change No:

Dart Aerospace Ltd.

1270 Aberdeen Street
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Mfg Date: 11/08/17
Job No: 167840



D4720-1 SPACER

NOTES:

- 1) MATERIAL: 6061-T4/T42 SEAMLESS ALUMINUM TUBING PER WW-T-700/6, AMS 4081, OR ASTM B210 / B221 / B241
REF DART SPEC M6061T4T0.375W.058
OR
6061-T6/T62/T6510/T6511 SEAMLESS ALUMINUM TUBING PER WW-T-700/6, QQ-A-200/8, QQ-A-225/8, AMS 4080 OR
AMS 4082 OR AMS 4083, OR ASTM B210 / B221 / B241
REF DART SPEC M6061T6T0.375W.58
HEAT TREAT TO -T4/T42 CONDITION. MIN UTS = 30 KSI (60 HREW MIN)
- 2) FINISH: NONE
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: NONE
- 7) WEIGHT: 0.02 lbs

RELEASED
2017-08-11
EUT-66

B	CORRECT MAT'L CALLOUT PER M6061T6T-ADD "SEAMLESS", T6510, T6511, AMS4083, 3.250 DIM WAS 3.180, REASON PAR15-444	SAD	17.01.26
A	NEW ISSUE	RP	12.09.10
REV.	DESCRIPTION	BY	DATE
DESIGN	RP	DART AEROSPACE USA, INC. EUGENE, OR	
DRAWN	SAD		
CHECKED	WM	DRAWING NO.	REV. B
MFG. APPR.	DD	D4720	SHEET 1 OF 1
APPROVED	CP	TITLE	SCALE
DE APPR.	N/A	SPACER	NTS
DATE	17.01.26	COPYRIGHT © 2012 BY DART AEROSPACE USA, INC. THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE USA, INC.	

APPROVED



Dart Hawkesbury
1270 Aberdeen St
Hawkesbury, ON
K6A 1K7
Canada

Tel (613) 632-5200

PURCHASE ORDER PO038307

Supplier: MEI001-VC
Metcor Inc.
560 Boul. Arthur Sauve
Saint-Eustache
QC
J7R 5A8 Canada
Phone: 450 473 1884
Fax: 450 491 5498

PO No: PO038307
PO Date: 11/9/17
Due Date: 11/14/17
Purchase Order
Revision:
Revision Date:
Ship-To Contact: Phone:

E-MAILED
NOV-09-2017

Ship To: 1270 Aberdeen Street
Hawkesbury
ON
K6A 1K7 Canada
Phone: 613-632-5200

Via: Ground
Pymt Terms: Net 30
Freight Terms:
Special Comments:

Items												
Line Item	Job	Part	Rev	Description	Item Tax	Status	Due Date	Order Quantity	Received Quantity	Balance	Unit Price (CAD)	Extended Price
1		D4720-1	-	Spacer ***HEAT TREAT AS PER DWG D4720*** HEAT TREAT TO T4/T42 CONDITION MIN. UTS=30 KSI (60 HREW MIN) NOTE: DETAIL C OF C REQUIRED PART ARE MADE FROM 6061-T6 MATERIAL		Firmed	11/14/17	306 pcs	0 pcs	306 pcs	\$1.22957/pcs	\$376.25

Line Item Note job # 167840

Grand Total: \$376.25

Order Notes

DWG REV A IPP REV:A 12.11.20 NEW ISSUE DD VERF:JLM

Procurement Quality Clauses
A005 right of entry
A012 chemical and physical test report
A016 personnel qualification
A017 raw material identification (as applicable)

A022 Apical Processing
A024 process certifications
A026 certification of material conformance
A041 quality management system
A042 dart notification by supplier
A043 retension of quality documents

METCOR INC.

560 BOUL. ARTHUR-SAUVÉ
ST-EUSTACHE, QC J7R 5A8
Tel: 450-473-1884 / Fax: 450-491-5498

Reçu de livraison

Delivery Receipt

BON DE TRAVAIL Order	EXPÉDITEUR Shipper ID	BON D'EXPÉDITION Shipper
323227	1	123902

EXPÉDITION COMPLÈTE / Shipped Complete

CLIENT /Customer 215

DART AEROSPACE
1270 ABERDEEN
HAWKESBURY, ON K6A 1K7
Ph: 613-632-5200
Fax: 613-632-1053



LIVRÉ À /Shipped To

DART AEROSPACE
1270 ABERDEEN
HAWKESBURY, ON K6A 1K7
Ph: 613-632-5200
Fax: 613-632-1053

COMMANDE DU CLIENT Customer PO	BON DE LIVRAISON DU CLIENT Customer Shipper No.	TYPE DE MATÉRIEL Material Type	DATE DE LA COMMANDE Order Date	TRANSPORTEUR Carrier
38307		AL-6061	2017/11/10	FEDEX

QUANTITÉ Quantity	No. PIÈCE / Part No.	NOM DE LA PIÈCE / Part Name	DESCRIPTION DE LA PIÈCE Part Description	POIDS Weight
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306 D4720-1

(306) D4720-1

JOB. 167840

1 BOITE DE CARTON

5,6

recu 308
2017-11-28

TYPE DE CONTENEUR Container Type	# DE CONTENEURS # Of Containers	COMMENTAIRES CONTENEUR Container Comments
BOITE DE CARTON	1	

certificat

EMPAQUETAGE Packing	
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QUANTITÉ EXPÉDIÉE / Quantity Shipped : 306

POIDS EXPÉDIÉ / Weight Shipped : 5,60

QUANTITÉ RESTANTE / Quantity Remaining : 0

POIDS RESTANT / Weight Remaining : 0,00

certificat

QUANTITÉ EXPÉDIÉE / Quantity Shipped : 306

POIDS EXPÉDIÉ / Weight Shipped : 5,60

Signature:

Date:

EXPÉDIÉ LE / Shipped On : 2017/11/23

METCOR INC.

560 BOUL. ARTHUR-SAUVÉ, ST-EUSTACHE, QC, J7R 5A8

Tél.: 450-473-1884

Télécopieur / Fax administration: 450-491-5498

Télécopieur / Fax production: 450 491-6454

Certificat de Conformité Certificate of Compliance

BON DE TRAVAIL order	CHARGEMENT load
323227	1

CLIENT / customer 215

DART AEROSPACE

1270 ABERDEEN

HAWKESBURY

ON K8A 1K7

LIVRÉ À / shipped to:

DART AEROSPACE

1270 ABERDEEN

HAWKESBURY

ON K8A 1K7

1

COMMANDE DU CLIENT customer po	CLASSIFICATION PIECE part classification	MATÉRIEL material	MAÎTRE D'OEUVRE prime contractor	PROGRAM
38307	N/A	AL-6061	N/A	N/A

SPÉCIFICATIONS DU PROCÉDÉ

processing specifications

SOL ANNEAL

SINGLE AGING TO CONDITION T42

EXIGENCE / requirement	SPÉCIFICATIONS / specified	TESTS EXÉCUTÉS / performed	RÉSULTATS DE TESTS / results
CONDUCTIVITY	36 - 44 % IACS	20	38 - 39 % IACS
HARDNESS		20	65,5 - 68,5 HREW
MESURE EN HR15TW = 65,5-68,5 HR15TW			

QUANTITÉ quantity	POIDS weight	DESCRIPTION DES PIÈCES parts description
306	5,6	D4720-1 (306) D4720-1 ✓ JOB. 167840 ✓ 1 BOITE DE CARTON

2017-11-28

23/11/17

COMMENTAIRES / comments

APPROUVÉ par / Approved by:

[Signature]



DATE: 2017-11-23

METCOR INC.

560 BOUL. ARTHUR-SAUVÉ, ST-EUSTACHE, QC, J7R 5A8

Tél.: 450-473-1884

Télécopieur / Fax administration: 450-491-5498

Télécopieur / Fax production: 450 491-6454

Certificat de Conformité Détail

Detailed Certificate of Compliance

BON DE TRAVAIL order	CHARGEMENT load
323227	1

CLIENT / customer 215

DART AEROSPACE

1270 ABERDEEN

HAWKESBURY

ON K6A 1K7

LIVRÉ À / shipped to:

DART AEROSPACE

1270 ABERDEEN

HAWKESBURY

ON K6A 1K7

1

COMMANDE DU CLIENT customer po	CLASSIFICATION PIECE part classification	MATÉRIEL material	MAÎTRE D'OEUVRE prime contractor	PROGRAM
38307	N/A	AL-6061	N/A	N/A

SPÉCIFICATIONS DU PROCÉDÉ

processing specifications

SOL ANNEAL

SINGLE AGING TO CONDITION T42

EXIGENCE / requirement	SPÉCIFICATIONS / specified	TESTS EXÉCUTÉS / performed	RÉSULTATS DE TESTS / results
CONDUCT	36 - 44 %IACS	20 (60kHz)	38 - 39 %IACS
HARDNESS		20	65.5 - 68.5 HREW MESURE EN HR15TW = 65,5-68,5 HR15TW

QUANTITÉ quantity	POIDS weight	DESCRIPTION DES PIÈCES parts description
306	5.6	D4720-1 (306) D4720-1 JOB. 167840 1 BOITE DE CARTON

COMMENTAIRES / comments

SOL. ANNEAL 985F, 30 MIN

AGE HARDEN AMBIANT 96 HRS

Heat treatment (HT) was performed with equipment that meets the requirements of requested specification.

All HT operations were performed in compliance with the required HT specification and all verifications have been performed and documented. No unauthorized changes were performed in regards to the HT. We certify that the material was manufactured, sampled, tested and inspected in accordance with the material specification and the purchase order and was found to meet the requirements.

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Le traitement thermique (TT) a été fait en utilisant des équipements en conformité avec la spécification demandée.

Toutes les opérations de TT ont été faites en conformité avec les requis de la spécification demandée et toutes les vérifications et les tests demandés ont été faites et documentés. Aucun changement n'a été faite par rapport au TT. On certifie que le matériel a été fabriqué, échantillonné, testé et inspecté en accord avec les spécifications du matériel et le bon de commande et le matériel rencontre les exigences spécifiées.

Ce document et les documents qui lui sont joints peuvent contenir des informations confidentielles, être soumis aux réglementations relatives au contrôle des exportations ou ayant un caractère privé. S'ils ne vous sont pas destinés, nous vous signalons qu'il est strictement interdit de les divulguer, de les reproduire ou d'en utiliser de quelque manière que ce soit.

METCOR INC.

560 BOUL. ARTHUR-SAUVÉ, ST-EUSTACHE, QC, J7R 5A8

Tél.: 450-473-1884

Télécopieur / Fax administration: 450-491-5498

Télécopieur / Fax production: 450 491-6454

Certificat de Conformité Détaillé

Detailed Certificate of Compliance

BON DE TRAVAIL order	CHARGEMENT load
323227	1

CLIENT / customer 215

DART AEROSPACE

1270 ABERDEEN

HAWKESBURY

ON K6A 1K7

LIVRÉ À / shipped to:

DART AEROSPACE

1270 ABERDEEN

HAWKESBURY

ON K6A 1K7

1

le contenu. Toute exportation ou réexportation non autorisée est interdite.

APPROUVÉ par / Approved by:

Isabel Otero
QA Technician



DATE: 2017-11-23



Dart Hawkesbury
1270 Aberdeen St Hawkesbury, ON K6A 1K7 Canada
Tel (613) 632-5200

Inventory

Operation Number	Operation	Serial Number	Job	Quantity	Weight	Original Serial Number	Location	Container	Status	Added	Special Comments	Label	Supplier	Change No
Part Number: M6061T6T0.375W.058 Revision: 6061-T6 Round Tube .375 X.058W														
100	Receive Ft	FM138083-1	167840	0 ft	0	M138083	MAT013		Stock	10/10/2017	*			
		S007838	167840	0 ft	0		MAT013		Stock	11/8/2017	Issue Container			
Operation Totals:		2		0	0									
Part Totals:		2		0	0									
Totals:		2		0	0									

Plex 1/8/2018 9:24 AM Dart.Boucher.Sylvie

DQA: _____ Date: _____

**WORK ORDER NON-CONFORMANCE / UPDATE**

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
Date : _____	Step #: _____	QTY Effective : _____		MRB (QSI042) Approval	
Description Work Order Deviation		Disposition		Completed By	
				Lead hand / Supervisor Approval Verification	
				QC / QA Coordinator Approval	
Root Cause		FAULT CATEGORY			
Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐	No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐	Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐	Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐	Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Misabeled ☐ Fit/Function ☐ Misaligned/off center ☐	Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐
OTHER : _____					